SEQUENCE LISTING

<110> BESEME, Frederic

BLOND, Jean-Luc

BOUTON, Olivier

MANDRAND, Bernard

MALLET, Francois

PERRON, Herve

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DISEASES OR WITH PREGNANCY DISORDERS

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<141>   1999-12-16

<150>   PCT/FR98/01442

<151>   1998-07-06

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agttatgtca tatctaagcc ccgcaacaaa agagtaccca ttcttccttt tgttatagga     1740

gcaggagtgc taggtgcact aggtactggc attggcggta tcacaacctc tactcagttc     1800

tactacaaac tatctcaaga actaaatggg gacatggaac gggtcgccga ctccctggtc     1860
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19

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tatgttaatc aatccggaat cgtcactgag aaagttgaag aaattccaga tcgaatacaa    2040

cgtatagcag aggagcttcg aaacactgga ccctggggcc tcctcagccg atggatgccc    2100

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aggcaaagac aggaggtaaa gaaatagcca atcatttatt gcctgagagc acagcaggag    2640

ggacaatgat cgggatataa acccaagttt tcgagccggc aacggcaacc ccctttgggt    2700

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20

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<223>   n = any nucleotide


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cactgggttc catggttctc ttctgtgacc cacggcttct aatataacta taacacttac     180


cacatggccc aagattccat tccttggaat ccgtgaggcc aagaactcca ggtcagagaa     240


tacgaggctt gccaccatct tggaagcggc ctgctaccat cttggaagtg gttcaccacc     300


atcttgggag ctctgtgagc aaggaccccc cggtaacatt ttggcaacca cgaacggaca     360
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21

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gatctaccgc agacccctgg accggcctgc tagcccacga tctgatgtta atgacatcaa      480

aggcacccct cctgaggaaa tctcagctgc acaacctcta ctacgcccca attcagcagg      540

aagcagttag agcggtcgtc ggccaacctc cccaacagca cttaggtttt cctgttgaga      600

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agctgg                                                               666
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<212> DNA

<213> Human

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cccagcatct caactcacct ggactatttt accccaaggg ttcagggata gtccccatct      180

atttggccag gcattagccc aagacttgag ccaatcctca tacctggaca cttgtccttc      240
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ggaacacatc cagcctatac tggcttatcc tcatcccaaa accctaaagc aactaagggg     480

attccttggc gtaataggtt tctgccgaaa atggattccc aggtatggcg aaatagccag      540

gtcattaaat acactaatta aggaaactca gaaagccaat acccatttag taagatggac      600

aactgaagta gaagtggctt tccaggccct aacccaagcc ccagtgttaa gtttgccaac      660

agggcaagac ttttgttcat atgtcacaga aaaaacagga atagctctag gagtccttac      720

acagatccga gggatgagct tgcaacctgt ggcacacctg actaaggaaa ttgatgtagt      780

ggcaaagggt tgacctcatt gtttacgggt agtggtggca gtagcagtct tagtatctga      840

agcagttaaa ataatacagg gaagagatct tactgtgtgg acatctcatg atgtgaatgg      900

catactcact gctaaaggag acttgtggct gtcagacaac tgtttactta aatgtcaggc      960

tctattactt gaagggccag tgctgcgact gtgcacttgt gcaactctta acccagccac     1020

atttcttcca gacaatgaag aaaagataaa acataactgt caacaagtaa tttctcaaac     1080

ctatgccact cgaggggacc ttttagaggt tcctttgact gatcccgacc tcaacttgta     1140
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23

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gactctaaat atgcttacct agtcctccat gcccatgcag caatatggaa agaaagggaa    1380

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gaaagggaaa tacaagagaa ctgccaagca tatattgaag ccaaaagagc tgcaaggcag    1560

gaccctccat tagaaatgct tattaaactt cccttagtat agggtaatcc cttccgggaa    1620

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gccaaatcat tatttactgg accaggcctt ttcaaaacta tcaagcagat agtcaggggcc   1860

tgtgaagtgt gccagagaaa taatcccctg ccttatcgcc aagctccttc aggagaacaa    1920

agaacaggcc attccctgg agaagactgg caactgattt tacccacaag cccaaacctc     1980

agggatttca gtatctacta gtctgggtag atactttcac gggttgggca gaggccttcc    2040

cctgtaggac agaaaaggcc caagaggtaa taaaggcact agttcatgaa ataattccca    2100
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24

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agtcctcagg gaaggtcgag aaaatgaatg aaacactcaa aggacatcta aaaaagcaaa   2280

cccaggaaac ccacctcaca tggcctgttc tgttgcctat agccttaaaa agaatctgca   2340

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ccaatgacct tgtgcttgac ccaagacagc caacttagtt gcagacatca cctccttagc   2460

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25

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ggttttcctg ttgagatggg ggactgagag acaggactag ctggatttcc taggctgatt    3060

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acttagctca cacctgacca atcagagagc tcactaaaat gctaattagg caaagacagg    3180

aggtaaagaa atagccaatc atttattgcc tgagagcaca gcaggaggga caatgatcgg    3240

gatataaacc caagttttcg agccggcaac ggcaaccccc tttgggtccc ctccctttgt    3300

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aaaaaaaaaa aa                                                        3372
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<213> Human

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<223> n = any nucleotide

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ggtgtccgct gtgctcctga tccagcgagg cgcccattgc cgctcccaat tgggctaaag   180

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gcttgccatt gttcctgcac ggctaagtgc ctgggtttgt tctaattgag ctgaacacta      240

atcactgggt tccatggttc tcttctgtga cccacggctt ctaatagaac tataacactt      300

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ttttgtagaa aaggcaaatg gagtgaagtg ccataagtac aaactttctt ttcattaaga      720

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cctccctatc ccagcatccc cgactccttc cccaactaat aaggaccccc cttcaaccca      840

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ccaattatga cccctccaag cagtgggagg aagagaattc ggcccagcca gagtgcatgt      960

gccttttttct ctcccagact taaagcaaat aaaaacagac ttaggtaaat tctcagataa     1020

ccctgatggc tatattgatg ttttacaagg gttaggacaa ttctttgatc tgacatggag     1080
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cagaaggaaa ganaatgatt ccccacaggc cagcaggcag ttcccagtct agaccctcat      1260

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ggacaaaggt cttttgagtc agaagccact aaccagatga tccagcagca ggactgaggg      1920

tgcctggggc aagcgccatc ccatgccatc accctcacag agccctgggt atgcttgacc      1980
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attgagggcc aggaaggttg tctcctggac actggtgcgg tcttcttagt cttactcttc   2040

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<222> (2213)..(2213)

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<222> (2398)..(2398)

<223> n = any nucleotide

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<222> (3787)..(3787)

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gargcttgcc accatcttgg aagcggcctg ctaccrtctt ggaagtggtt caccaccatc   540

33

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maagtgatgg gaaacgttcc ccgcaagaca aaaacgcccc taagacgtat tctggaraat   660

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34

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35

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37

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ccatcaratg gccaaatcat tatttactgg accaggcctt ttcaaaacta tcaagcarat      4620

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raggccttcc cctgtaggac agaaaaggcc caagaggtaa taaaggcact agttcatgaa      4860

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gccacagtaa cccagggagt atcccaggcg ttaggtatac gatatcactt acactgcgcc      4980

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aaaaagcaaa cccaggaaac ccacctcaca tggcctgytc tgttgcctat agccttaaaa      5100

agaatctgca actttcccca aaaagcagga cttagcccat acgaaatgct gtatggaagg      5160
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38

cccttcataa ccaatgacct tgtgcttgac ccaagacagc caacttagtt gcagacatca   5220

cctccttagc caaatatcaa caagttctta aaacattaca aggaacctat ccctgagaag   5280

agggaaaaga actattccac ccwwgtgaca tggtattagt caagtccctt cyctctaatt   5340

ccccatccct agatacatcc tgggaaggac cctacccagt cattttatyt accccaactg   5400

cggttaaagt ggctggagtg gagtcttgga tacatcacac ttgagtcaaa tcctggatac   5460

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gcacccccte catgccgctg tatgaccagt agctcccty accmagagtt tctatggaga   5700

atgcagcgtc ccggaaatat tgatgcccca tcgtatagga gtctttstaa gggaacccccc   5760

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catgcaaata ctcattattg gacaggaaaa atgattaatc ctagttgtcc tggaggactt   5880

ggagtcactg tctgttggac ttacttcacc caaactggta tgtctgatgg gggtggagtt   5940

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ggcacctcta gcccctacaa aggactagat ctctcaaaac tacatgaaac cctccgtacc   6060

39

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catactcgcc tggtaagcct atttaatacc accctcactg ggctccatga ggtctcggcc      6120

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cctgtacctg aacaatggaa caacttcagc acagaaataa acaccacttc cgttttagta      6240

ggacctcttg tttccaatst ggaaataacc catacctcaa acctcacctg tgtaaaattt      6300

agcaatacta catacacaac caactcccaa tgcatcaggt gggtaactcc tcccacacaa      6360

atagtctgcc taccctcagg aatatttttt gtctgtggta cctcagccta tcgttgtttg      6420

aatggctctt cagaatctat gtgcttcctc tcattcttag tgcccccyat grccatctac      6480

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cttccttttg ttataggagc aggagtgcta ggtgcactag gtactggcat tggcggtatc      6600

acaacctcta ctcagttcta ctacaaacta tctcaagaac taaatgggga catggaacgg      6660

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craaatcgaa gagctttaga ctygctaacc gctgaragag ggggaacctg tttattttta      6780

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40

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cccctggacc ggcctgytag cccacgatct gatgttaatg acatcaaagg cacccctcct      7140

gaggaaatct cagctgcaca acctctacta cgccccaatt cagcaggaag cagttagagc      7200

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accacatcca cctttaaaca cggggcttgc aacttagytc acacctgacc aatcagagag      7380

ctcactaaaa tgctaattag gcaaagacag gaggtaaaga aatagccaat catytattgc      7440

mtgagagcac agcaggaggg acaatgatcg ggatataaac ccaagtyttc gagccggcaa      7500

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<211>  2563

<212>  DNA

<213>  Human
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41

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ggtgtctgct gtgctcctga tccagcgagg ggcccattgc cactcccaat cgggctaaag   180

gcttgccatt gttcctgcat ggctaagtgc ccaggttcat cctaattgag ctgaacacta   240

gtcactgggt tccacagttc tcttccatga accacggctt ttaatagagc tataacactc   300

atcgcaaggc ccaagattcc attccttgga atctgtgagg ccaagaaccc taggtcagag   360

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cccagtaaca tttagcgacc acgaagggac ctccaaagcg gtaatattgg accactttca   540

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ggttaaaaac gattagcgtg gcctccggac ttaagaatca ggtgtgaggc tatctgggga   660

agggctttct aacaaccccc aaccrttctg ggttgggaat gttggtctgc ctggagccag   720

cttccacttt caattttcct ggggaagcca agggccgact agaggcagaa agctgttgtc   780

ccaaattccc ggcagtagcc ggttgagatc atggcgcagc cagaagtctt tactccacag   840

tcacccatgc atgcgcccct atctttcctt ctgacccata cctcctgggt cctaaccatg   900

42

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actttcttaa aagggtagcc ccaaaattct ccttacctct gaatctactt cctctgatcc      960

ctgcctccta ggtgctaatg gttcagactt tcatttcctc tagcaagttg tatytccaaa     1020

gggatataag gaagctctac actgtatcct taggcatcta ggctctaaac ccagggagtc     1080

ttgtccctga tgtcccaacc gatttaggta tatagttctc gacatgggca gttatgtggg     1140

acccattccc caccaccctt gccagggccc caagtttgta aatggctaag agaggaaagt     1200

gagagagaga gagacagagt gagacacaga gagagggaga gacagagaga gagacagaga     1260

ggagagagac acagagaggg gagagacaca gagaggagaa ggggcagag agaccaagag       1320

ggagtcymag agagagagaa agaagaagaa atagtagaaa aaaaagtgtg ccctattcct     1380

ttaaaagcca gggtaaattt aaaaaaccta tacttgataa ttgaaggtct tctccatgac     1440

cctgtaacac tctaatacta ccttgttctc agtgtaaaca agggtgttag cctgaaaaca     1500

ctgagaccgc tgacacccat agctttccta taaaaaatcc ttaacccagt aacccgcaga     1560

tggcccgcat gcattcaatc tgtagtggca actgctttgc taacaagaat aaagtggaaa     1620

agtaactttt agaggaaacc tcattgtgag cacacctcac cagttcagaa ttattctaag     1680

tcaaaaaagc aaaaaggtag cttactaact caaaaatctt aaagtatggg gttattttgt     1740

tagaaaaagg taatttaaca ctaatcactg ataattccct taacccagaa gatttcctaa     1800
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43

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caggagattt aaatcttaat taccatacaa aggtctgacc agacctagga ggaactccct    1860

tcagtacagg atgatagatg gttcctccca ggtgaatgaa aaaaaaatca caatgggtat    1920

tcagtaattg atagggagac tcttgtggaa gcagagttag aaaaactgcc taataattgg    1980

tctccccaaa cctgcgagct gtttgcactc agccaagcct taaagtactt ctagaatcaa    2040

aaagattatc tcaatcctga ctcaaaaggt tacctacacc ctctgtgaaa cgaatttact    2100

taagaactgt ttatgggact gcatcttgat ggggcagctg ggttgtcatg aaatactcag    2160

gaatgcagcc tagctctagg actcacccct gagcacaaag gcaatgttgg gcatgctggt    2220

aaaggaccac tagaatccag cagtccgaac cctttctttg ggttaagaaa ggcgggaaaa    2280

caggcgcagg actgctacat tggtaagcgt aactaatcca ataagcagag gtccatgggt    2340

ggtgacacac tctggaaagg aataagcatt agraccatag aggacgctct acgactaatg    2400

ctcgtcggaa aatgactaga ggtgctggca tccctatgtt ctttttttcag atgggaaatg    2460

ttccccctca aggcaaaaac acccctaaga tgtattctgg acaattggga ccaatttgac    2520

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<211> 2585

44

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<213>   Human

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<223>   n = any nucleotide

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<222>   (833)..(833)

<223>   n = any nucleotide

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ccttgtgcca tcaagccaac caagtgctct taaacttcct cgccacctgt ggctacaagg   180

tttccaaacc agaggctcag ctctgcttac agcaggttaa atacttaggg ctaaaattat   240

ccaaaggcac cagggccctc agtgaggaac gtatccagcc tatactggct tatcctcatc   300
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ccaaaaccct gaagcaatta agagggttcc ttggcataaa aggctgctgt tgaatatgga   360

ttcccaggta caatgaaata gccaggccat tatacacact aattacggga actcagaaag   420

ccaataccca tttagtagaa tggacacctg aagcagaagc ggctttccag gccctaaaga   480

aggccctaat ccaagcccca gtgttaagct tgccaatgga gcaagacttt tctttatatg   540

tcacagaaaa aaaaacagga atagctctag aagtccttac acaggtccga gggaccagct   600

tacaacacat ggcatacctg agtaaggaaa ctgatgtagt ggcaaagggt tggactcatt   660

gtttacaggt agtggcagca gtagcagtct tagcatctga agcagttaaa atgatacagg   720

gaaganatct tactgtgtgg acatctcatg atgtgaacgg catactcact gctaaaggag   780

actgtggctg tcagacaacc atttgcttaa atatcaggct ctatcacttg aanggccagt   840

gctgccactg tgcacttgtg caactcttaa cccacccaca tttcttccag acaatgaaga   900

aaagatagaa cataactgtc aacaagtgat tgttcaaacc tacaccgctc gaagggacct   960

tctagaggtt cccttgactg atcctgagct caacttctat actgatggaa gttccttttg   1020

tagaaaaagg acttcgaaag gcgggtatgc agtggccagt gataatggaa tacttgaaag   1080

taatcccttc actccagaaa ctagcattca gctggcagaa ttaatagcct tcacttgggc   1140

attagaacac aggagaagga aaaggagtaa atatatatac agactccaag tatgcttact   1200

46

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tagtcctcca tgcccatgca gcaatataga gagaaagcga attcctaact tctgagggaa    1260

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atagaaggac ccctagtaca gggcaatccc cttcaggaaa ccaagcccca atactcagca    1500

gaagaaatgg aatggggaac ctcatgagga catagtttcc tcccctcagg atggctagcc    1560

accaaagaag gaaaaatact tttgcctgca gctaaccaat ggaaattact taaaaccctt    1620

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gcccatgagg taataaaggc actaattcat gaaataattc ccagatttgg atttccccaa    1980

ggcttacaga gtgataacgg ccccactttc aaggctacag taacccaggg agtatcccag    2040

acattagaca tacaatatca cttacactga gcccggaggc cacaatcctc aggaaagttg    2100
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47

agaaaatgaa tgaaacgctc aaatgacatc taaaaaagct aacctaagaa acccacctct   2160

catggtttgc tctgttgcct atagccttag taagaatccg aaactctccc caaaaagcgg   2220

gactcagccc atacgaaatg ctgtatggac ggcccttcct aaccaatgac cttgtgcttg   2280

acctagagat ggccaactta gttgcagata tccctcctta gccaaatatc aacaagttct   2340

taaaacgtca cagggaacct gtccctgaga ggagggaaag gaattattcc aacctggtga   2400

catggtatta gtgaagtccc ttccctccaa ctccccatcc cctggataca tcctgggaag   2460

gaccctactc agtcatttta tctatcccaa ccgcggttaa aatggctgga gtagaatctt   2520

ggatacatca cattcgagtc aaaccctaga tactgccaca aggaacctga aaatccagga   2580

gacaa   2585

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<211> 2575

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ctggacactc ttctcctttg gtatgtggat gatttacttt tagcttcctg ttcagaaacc   120

48

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ttgtgccatc aagccaccca agcactctta aatttcctcg ctacctgtgg ctacaaggtt       180

tccaaaccaa agacccagct ctgctcacag caggttaaat acttggggct aaaattatcc       240

aaaggcacca gggccctcag tgaggaacgt atcaagccta tactggctta tcctcatccc       300

caaatcctaa agcaactaag agagttcctt agcataacag gtttctgctg aatatggatt       360

cccaggtatg gcaaaatagc cagaccatta tatacgctaa ttaaggaaac tcagaaagcc       420

aatacccatt tagtaagatg gatacctgaa gcagaagcag ctttccaggc cctaaagagg       480

gccctaaccc aagccccagt gttaagcttg ccaacagggc aagactttac ttcgtatgtc       540

acagaaaaaa caggaaatag ctctaggagt ccttacacaa gtctgaggga tgagcttgca       600

acccatggca tacctgagta aggaaattga tgtagtggca aagggttggc ctcattgttt       660

atgggtagtg gcggcagtag cagtcttagc atctgaagca gttaaaatga tacagggaag       720

agatcttact gtgtggacat ctcatgatgt gaatggcata ctcactgcta aaggagactt       780

gtggctgtca gacaaccatt tacttaaata tcaggctgta ttacttgaag ggccagtgca       840

gcaactgcgc agttgtgcag ctcttaaccc agccacattt cttccagaca atgaagatag       900

aacataactg ccaacaagta atttctcaaa cctaggccgc tcgaggaaac cttttagagg       960

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49

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gactttgaaa agtggggtat gcagtgctca gtgataatgg aatacttgaa aataatccct    1080

tcattccagg aaccagcgtt cagctggcag aattaatagc cctcactcgg gcattagaat    1140

taggagaagg aaaaagggta aatacacata cagattctaa gtatgtttac ttagtcctcc    1200

gtgcccacgc agcaatatgg agagaaaggg aatgcttaac ttctgaggga acacctatca    1260

aacatcagga agttattagg agattattat tggctataca gaaacctaaa gaggtggcag    1320

tcttacactg ctggggtggt cagaaagaaa aggaaaggga aataaaaggg aactgccaag    1380

cggatattga agccaaaaga gccgcaaggc aggaccctcc attagaaatg cttatagaag    1440

gacccctagt atgggggtaat cccctccggg aaaccaagcc ccaatactta gaaaaagaaa    1500

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cctttcactt agacattgat agcacccatc agatggccaa atcattattt actggaccag    1680

gccttttcaa aactatcaag cagctagtca gggcctgtga agtgtgccga agaaataatc    1740

ccatgcctta tcaccaagct ccttcaggag aacaaagaac aggccattac ccaggagaag    1800

rvtggcaact agattttacc cacatgccca aatctcaggg atttcagtat ctactagttt    1860

gggtagatac tttcactggt tgggcagaga ccttcccctg taagacagaa aagtcccaag    1920
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50

aggtaataaa ggcattagtt catgaaataa ttcccagatt cagacttccc tgaggcttac   1980

agagtgacaa tggccctgct ttcaaggcta cagtaaccca ggagtatccc aggtgttagg   2040

tatacaatat cacttacact gcgcctggag gcagtcctca gggaaggccg agaaactgaa   2100

tgaaacactc aaacgacatc taaaaaaagc taacccagga aaaccacctc acatggcctg   2160

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catacgaaat gctatatgga tagcccttcc taaccaatga ccttgtgctt gactgagaga   2280

gagccaactt agttgcagac atcacctcct tatccaaata tcaacaagtt cttaaaacat   2340

tacaaggagc ctgtccccga gaagagggga aggaactatt ccaccctggt gacatggtat   2400

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cagtcatttt atctacccca accgcagtaa aagtggctgg agtggagtct tggatacatc   2520

acactcgagt caaaccctgg atattaccaa aggaacctga aaatccagga gacaa   2575

)

<210>   15

<211>   783

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<213>   Human

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<222> (515)..(515)

<223> n = any nucleotide

<220>

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<222> (563)..(563)

<223> n = any nucleotide

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gagagctcac taaaatgcta attaggcaaa gacaggaggt aaagaaatag ccaatcatyt     180
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rgscaacgaa cyccasgtca gagaayacga rgcttgccac catcttggaa gcggcctgct      720

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aca                                                                    783
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<210> 16

<211> 20

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<213> Artificial

53

<220>

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<400> 16
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<210> 17

<211> 21

<212> DNA

<213> Artificial

<220>

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<400> 17
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<210> 18

<211> 21

<212> DNA

<213> Artificial

<220>

<223> PCR primers or probe

<400> 18
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<210> 19

<211> 24

<212> DNA

<213> Artificial

<220>

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<210> 20

<211> 21

<212> DNA

<213> Artificial

<220>

<223> PCR primers or probe

<400> 20

tcagggatag cccccatcta t   21

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<211> 22

<212> DNA

<213> Artificial

<220>

<223> PCR primers or probe

<400> 21

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<210> 22

<211> 20

<212> DNA

<213> Artificial

<220>

<223> PCR primers or probe

<400> 22

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<211> 20

<212> DNA

<213> Artificial

<220>

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<210> 24

<211> 22

<212> DNA

<213> Artificial

<220>

<223> Probe or primer

<400> 24

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<210> 25

<211> 21

<212> DNA

<213> Artificial

<220>

<223> Probe or primer

<400> 25

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<210> 26

<211> 22

<212> DNA

<213> Artificial

<220>

<223> Probe or primer

<400> 26

cttcccagga tgtatcactt tg   22

<210> 27

<211> 24

<212> DNA

<213> Artificial

<220>

<223> Probe or primer

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<210> 28

<211> 21

<212> DNA

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<223> Probe or primer

<400> 28

gcttccaaga tggtggcaag c   21

<210> 29

<211> 678

<212> DNA

<213> Artificial

<220>

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<221> misc_feature

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<223> n = any nucleotide

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ccttgtgcca tcaagccacc caagtgctct taaatttcct cgccacctgt ggctacaagg   180

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tttccaaacc aaaggctcag ctctgctcac agcagaaggc tatttaccct aaatacttag      240

ggctgaaatt atccaaaggc accagggccc tcagtgagga atgtatccag cctatactgg      300

cttatcctta tcccaaaacc ctaaaacaac taagaaggtt ccttggcata ataggcataa      360

caggcataac aggtttctgc tgaatatgga ttcccaagta cggcaaaata gccagaccat      420

tatatacact aattaaggaa actcagaaag ccaatacccca tttagtaaga tggacacctg      480

aagcagaggc agctttccag gccgtaaaga cacccctaac ccaagcccca gtgttaagct      540

tgccagcggg gcaagacttt tctttctgtg tcacagaaaa aataggaata gctntaggag      600

tccttacaca ggtccgaggg accagcttgc aacccatggc atacctgagt aaggaaattg      660

atgtagtggc aaagggtt                                                    678
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<210> 30

<211> 536

<212> DNA

<213> Artificial

<220>

<223> Pgag-LB19 probe

61

<400> 30

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gtccaaaagg acatagacaa aggagtaaac aatgaaccaa agagtgccaa tattccctgg   120

ttatgcaccc tccaagcggt gggagaagaa ttcggcccag ccagagtgca tgtacctttt   180

tctctctcac acttgaagca aattaaaata gacctaggta aattctcaga tagccctgat   240

ggctatattg atgttttaca aggattagga caatcctttg atctgacatg gagagatata   300

atattactgc taaatcagac gctaacctca aatgagagaa gtgctgccat aactggagcc   360

cgagagtttg gcaatctctg gtatctcagt caggtcaatg ataggatgac aacggaggaa   420

agagaacgat tccccacagg gcagcaggca gttcccagtg tagctcctca ttgggacaca   480

gaatcagaac atggagattg gtgccgcaga catttaaagc tttccccggg taccga   536

<210> 31

<211> 591

<212> DNA

<213> Artificial

<220>

<223> Penv-C15 probe

62

<400> 31

ccatggccat ctacactgaa caagatttat acaatcatgt cgtacctaag ccccacaaca   60

aaagagtacc cattcttcct tttgttatca gagcaggagt gctaggcaga ctaggtactg   120

gcattggcag tatcacaacc tctactcagt tctactacaa actatctcaa gaaataaatg   180

gtgacatgga acaggtcact gactccctgg tcaccttgca agatcaactt aactccctag   240

cagcagtagt ccttcaaaat cgaagagctt tagacttgct aaccgccaaa agaggggggaa   300

cctgtttatt tttaggagaa gaacgctgtt attatgttaa tcaatccaga attgtcactg   360

agaaagttaa agaaattcga gatcgaatac aatgtagagc agaggagctt caaaacaccg   420

aacgctgggg cctcctcagc caatggatgc cctgggttct ccccttctta ggacctctag   480

cagctctaat attgttactc ctctttggac cctgtatctt taacctcctt gttaagtttg   540

tctcttccag aattgaagct gtaaagctac agatggtctt acaaatctag a   591

<210> 32

<211> 364

<212> DNA

<213> Artificial

<220>

<223> Ppro-E probe

<400> 32

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ctaacctgag gatccagcag caggactgag ggtgcccggg gcaagtgcca gcccatgcca        60

tcaccctcag agccccgggt atgtttgacc attgagagcc aggaagttaa ctgtctcctg       120

gacactggcg cagccttctc agtcttactt tcctgtccca gacaattgtc ctccagatct       180

gtcactatcc gagggggtcct aggacagcca gtcactacat acttctctca gccactaagt      240

tgtgactggg gaactttact cttttcacat gcttttctaa ttatgcctga aagccccact       300

cccttgttag ggagagacat tttagcaaaa gcaggggcca ttatacacct gaacaagctt       360

gaaa                                                                    364
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<210> 33

<211> 538

<212> PRT

<213> Human

<400> 33

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Met Gly Leu Pro Tyr His Ile Phe Leu Cys Ser Val Leu Ser Pro Cys
1               5                   10                  15
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64

Phe Thr Leu Thr Ala Pro Pro Pro Cys Arg Cys Met Thr Ser Ser Ser
            20   25   30

Pro His Pro Glu Phe Leu Trp Arg Met Gln Arg Pro Gly Asn Ile Asp
            35   40   45

Ala Pro Ser Tyr Arg Ser Leu Ser Lys Gly Thr Pro Thr Phe Thr Ala
            50   55   60

His Thr His Met Pro Arg Asn Cys Tyr His Ser Ala Thr Leu Cys Met
65   70   75   80

His Ala Asn Thr His Tyr Trp Thr Gly Lys Met Ile Asn Pro Ser Cys
                    85   90   95

Pro Gly Gly Leu Gly Val Thr Val Cys Trp Thr Tyr Phe Thr Gln Thr
                    100   105   110

Gly Met Ser Asp Gly Gly Gly Val Gln Asp Gln Ala Arg Glu Lys His
                    115   120   125

Val Lys Glu Val Ile Ser Gln Leu Thr Gly Val His Gly Thr Ser Ser
            130   135   140

Pro Tyr Lys Gly Leu Asp Leu Ser Lys Leu His Glu Thr Leu Arg Thr
145   150   155   160

His Thr Arg Leu Val Ser Leu Phe Asn Thr Thr Leu Thr Gly Leu His
                    165   170   175

Glu Val Ser Ala Gln Asn Pro Thr Asn Cys Trp Ile Cys Leu Pro Leu
                180   185   190

Asn Phe Arg Pro Tyr Val Ser Ile Pro Val Pro Glu Gln Trp Asn Asn
                195   200   205

Phe Ser Thr Glu Ile Asn Thr Thr Ser Val Leu Val Gly Pro Leu Val
                210   215   220

Ser Asn Val Glu Ile Thr His Thr Ser Asn Leu Thr Cys Val Lys Phe
225   230   235   240

Ser Asn Thr Thr Tyr Thr Thr Asn Ser Gln Cys Ile Arg Trp Val Thr
                245   250   255

Pro Pro Thr Gln Ile Val Cys Leu Pro Ser Gly Ile Phe Phe Val Cys
                260   265   270

Gly Thr Ser Ala Tyr Arg Cys Leu Asn Gly Ser Ser Glu Ser Met Cys
                275   280   285

Phe Leu Ser Phe Leu Val Pro Pro Met Thr Ile Tyr Thr Glu Gln Asp
                290   295   300

Leu Tyr Ser Tyr Val Ile Ser Lys Pro Arg Asn Lys Arg Val Pro Ile
305   310   315   320

Leu Pro Phe Val Ile Gly Ala Gly Val Leu Gly Ala Leu Gly Thr Gly
                325   330   335

66

Ile Gly Gly Ile Thr Thr Ser Thr Gln Phe Tyr Tyr Lys Leu Ser Gln
            340   345   350

Glu Leu Asn Gly Asp Met Glu Arg Val Ala Asp Ser Leu Val Thr Leu
            355   360   365

Gln Asp Gln Leu Asn Ser Leu Ala Ala Val Val Leu Arg Asn Arg Arg
            370   375   380

Ala Leu Asp Leu Leu Thr Ala Glu Arg Gly Gly Thr Cys Leu Phe Leu
385   390   395   400

Gly Glu Glu Cys Cys Tyr Tyr Val Asn Gln Ser Gly Ile Val Thr Glu
                405   410   415

Lys Val Glu Glu Ile Pro Asp Arg Ile Gln Arg Ile Ala Glu Glu Leu
            420   425   430

Arg Asn Thr Gly Pro Trp Gly Leu Leu Ser Arg Trp Met Pro Trp Ile
            435   440   445

Leu Pro Phe Leu Gly Pro Leu Ala Ala Ile Ile Leu Leu Leu Leu Phe
            450   455   460

Gly Pro Cys Ile Phe Asp Leu Leu Val Asn Phe Val Ser Ser Arg Ile
465   470   475   480

Glu Ala Val Lys Leu Gln Met Glu Pro Lys Met Gln Ser Lys Thr Lys
                485   490   495

Ile Tyr Arg Arg Pro Leu Asp Arg Pro Ala Ser Pro Arg Ser Asp Val
                500   505   510

Asn Asp Ile Lys Gly Thr Pro Pro Glu Glu Ile Ser Ala Ala Gln Pro
                515   520   525

Leu Leu Arg Pro Asn Ser Ala Gly Ser Ser
        530   535

<210> 34

<211> 52

<212> PRT

<213> Human

<400> 34

Met Glu Pro Lys Met Gln Ser Lys Thr Lys Ile Tyr Arg Arg Pro Leu
1   5   10   15

Asp Arg Pro Ala Ser Pro Arg Ser Asp Val Asn Asp Ile Lys Gly Thr
                20   25   30

Pro Pro Glu Glu Ile Ser Ala Ala Gln Pro Leu Leu Arg Pro Asn Ser
                35   40   45

Ala Gly Ser Ser
        50

<210> 35

<211> 48

<212> PRT

<213> Human

<400> 35

Met Leu Met Thr Ser Lys Ala Pro Leu Leu Arg Lys Ser Gln Leu His

1   5   10   15

Asn Leu Tyr Tyr Ala Pro Ile Gln Gln Glu Ala Val Arg Ala Val Val

            20   25   30

Gly Gln Pro Pro Gln Gln His Leu Gly Phe Pro Val Glu Met Gly Asp

        35   40   45

<210> 36

<211> 20

<212> DNA

<213> Unknown

<220>

<223> Splice donor site

<400> 36

atccaaagtg gtgagtaata   20

<210>   37

<211>   20

<212>   DNA

<213>   Unknown

<220>

<223>   Splice acceptor site

<400>   37

ctttttttcag atgggaaacg   20